19980821H1-FDIR

Hurricane 1998
Tropical Storm Bonnie

Flight #3 980821H

Sensor or system	Number or Name
INE	1
Accelerometer	1
Temperature Probe	2
Dew Point Probe	1
Altitude (for vertical wind)	RA-159
Static Pressure	Rosemount Fuselage
Dynamic Pressure	Rosemount Fuselage
Time Source	Micro 99
Constants File	CO2988.CON

Notes:

Radar altimeter (RA159) had a spike at takeoff and was set to zero from 1803:01-1807:06 and then replaced by RA232 from 1807:06-1815:48. RA159 was replaced by RA232 + 15.0 form 1819:15-1826:57. There were several spikes in RA159 during the flight, all of these spikes were removed and patched (1819:31-1820:30, 2035:30-2036:30, 2101:30-2103:30, 2106:30-2107:00, 2209:00-2210:00, 2347:00-2348:00, 2351:00-2352:00, 0019:00-0020:00 (2), 0148:31-0149:00, 0213:00-0214:00, and 0225:31-0226:30). RA159 had a spike at landing and was set to zero 0234:46-0238:00.

Dewpoint (DW1) was balanced three separate times at the beginning of the flight due to inconsistent readings. The spikes due to balancing were removed and patched (1825:15-1827:00, 1845:00-1849:00, and 1937:30-1943:00). The dewpoint (DW1) performance improved at 1950:00 and continued thru the end of the flight. Due to other instrumentation problems (no DW2 and no LW for comparison) and occasional oscillations in the dewpointer (DW1), confidence in dewpointer (DW1) was still less than desired. Dewpoint (DW1) exceeded ambient temperature (AT2) several times due to heavy precipitation (2050:00-2210:00).

Static pressure (PSF) had two spikes removed and patched (0041:30-0043:30).

Dynamic pressure (PQF1) had a spike removed and patched (0043:00-0044:00). Dynamic pressure (PQF1) and static pressure (PSF) had several small spikes (~0.5 mb) that were not edited from (0045:00-0056:00).

Dynamic slip pressure (DBP) had problems due to possible leak in the line. DBP was replaced by the dynamic pressure on the fuselage (PQF1) with an appropriate offset (1949:41-2019:41 (offset +4.55), 2056:40-2202:20 (offset +5.1), and 2218:24-2226:26 (offset +4.5).

	Takeoff	Landing
Aircraft static pressure	1005.9	1010.4
Corrected tower pressure	1013.2	1015.5

The aircraft INE positions were renavigated with respect to GPS.

SPECIAL NOTE!!! Locations 80, 81 and 82 of record five on the standard tape contain vertical ground, vertical air and vertical speeds, respectively, computed using Dave Jorgensen's vertical wind algorithm.
It is recommended that these values be used for vertical wind analysis.

Flight Meteorologist: Stan Czyzyk, (813) 828-3310 ext. 3086

9808 21H

TIME	LAT	LON	TK	HD	TA	TD	WD	WS	PA	GA	PS	SP	REMARKS
184300	15 23	59 49	346	348	-3.3	-43.0	16.5	10.0	5495	5836	505.4	1008.5	19K
1923											SC DECK BLO (FLKD)		RECCO #2
194324	20 02	61 05	267	266	-3.0	-25.3	141	15.8	5493	5840	505.6	1008.6	DROP #1
1954													LECCO
2007	20 02	63 02	277	273			155	32.2					RAINBAND
201900	2000	64 00	268	264	-2.2	-11.8	167	24.1	5484	5815	56.2	1001.2	DROP #2
201900													BT
205031	20 33	66 18											DROP #3
205723	21 00	66 42											DROP #4
210335	21 22	67 07											BT
210722	21 33	67 29											DROP #5
2110													BT
													DROP #6
													DROPSEN 15K
212410	20 26	67 25											DROP #7
213352	20 59	66 51											DROP #8 CNTR
213731	21 16	66 38											DROP #9
213732											OFF		BT
214651	21 40	66 16									OUTER EDGE CONV		DROP #10
214652													BT.
215028	21 58	66 16											RAINBAND
215029													DROP #11
215354	22 15	66 23											BT.
215355	22 34	66 33											DROP #12
													MIX UP BT
215818													DROP #13
215809													BT
215923	23 33	67 22									LEVEL	19K	DROP #14 NO LA
221524	23 33	67 27											BT
221925	23 33	67 44											DROP #15
223237	23 33	69 01											DROP #16
225409	23 24	71 00	178	175	-9.6	-39.5	48	25.4	6404	6824	446.0	1010.5	DROP #17 FL20
231619	21 30	71 05	234	234	-8.8	-38.3	48	29.2	6401	6791	448.4	1006.5	DROP #18 FL2
234248	20 08	73 07	247	247	-9.3	-36.6	54	20.8	6392	6802	447.1	1008.3	DROP #19
000740	18 56	74 58	190	187	-9.1	-48.7	90	13.8	6390	6792	447.1	1007.3	DROP #20
002200													CLIMB
002534	17 29	74 54	121	119	-12.4	-28.6	42	11.5	6710	7134	427.0	1009.7	DROP #21 FL2
005955	16 05	72 20	87	88	-11.2	-36.3	103	12.7	6720	7141	427.0	1006.6	DROP #22
013001	16 00	69 45	90	93	-11.8	-32.3	185	16.3	6719	7147	427.2	1008.9	DROP #23
014050													CLIMB
014235	15 59	68 39											LEVEL 23K
020117	16 02	67 01	51	56	-17.5	-37.7	127	10.2	7036	7498	408.5	1008.7	DROP #24

U.S. DEPT. COMM./NOAA/OAO - DATA SECTION WORK FORM NO.1 OAOWF1 FILE

FLT ID: 980821A	FM: TBPB	TO: TISX
FLT NO: 98-068	BLK IN: 0240Z	ATA: 0235Z
ETD: 1800Z	BLK OUT: 1759Z	ATD: 1807Z
ETE: 0300Z	BLK TIME: 8.41 8.7	FLT TIME: 8:28 8.5
SPONSOR ORG: HRD	PROGRAM: HURR.RES.	PURPOSE: SYN. FLOW...BONNIE

OAO PERSONNEL

AC PHIL IRSBORN, R ✓	SYS ENG MCMILLAN, S ✓
CP TAGGART, B ✓ / OMARA, J ✓	DATA SYS
NAV BOTHBUN, D ✓	RADAR DELGADO, J ✓
FE TORREY, R ✓	DT/ODW BARR, J ✓
RADIO ROGERS, M	CLD PHYS
FD CZYZYK, S ✓	DOPPLER CURRY, J ✓

PARTICIPATING SCIENTIST/VISITORS/OAO

LAST, FIRST NAME	ACTIVITY ON A/C	AFFILIATION
BLACK, P ✓	P.I.	HRD
BLACK, M ✓	SCIENTIST	"
MARKS, F ✓	"	"
LEIGHTON, P ✓	"	"
CIONE, J ✓	"	"
BRACKEN, E ✓	"	"

PROPOSED/ACTUAL MISSION/REMARKS (RECCO, FIXES, STORM, PENET, NHOP ETC)

T7Z HAS BEEN 1°C WARM CONSISTENTLY

RA-159 OUT/GOING TO SWAP 1815Z/SWAP AGAIN UP @ 1827Z

1825.20 BALANCE DW1

1845.00 BALANCE DW1

RD NOT WORKING, LW STILL OUT (JW)

TW NOT WORKING PROPERLY, BACK (1940Z)

3 TEMP DROPS NIT X MITCH HRD WORKSTATION PROBS

DME MUCH BETTER

U.S. DEPT. COMM./NOAA/OAO - DATA SECTION WORK FORM NO.2 OAOWF2

FLT ID: 980821H TIME OFF: 1807Z TIME ON: 0257Z

	A/C T/O	WX STN	A/C LAND	WX STN
PRESSURE	1005.9	29.92	1010.4	2989

	NO	DATA DISPOSITION/DATE/QUALITY
1/SEC FLT LVL TAPES	2	
FAST FLT LVL TAPES		
RADAR TAPES		
DOPPLER TAPES		
ODW CASSETTES		
HARD COPIES	1	
AXDT	9	
AXCP		
ODW		
6PS	24	2 BAD

PHOTOGRAPHY

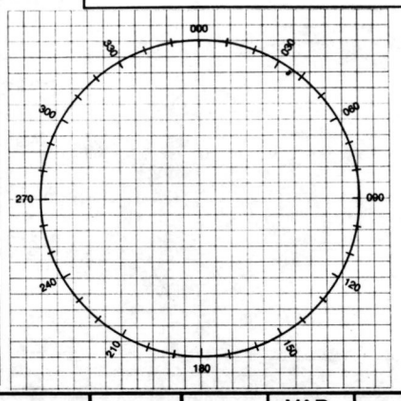
	FWD	LS	RS	VERT	
ON					
OFF					
RATE					

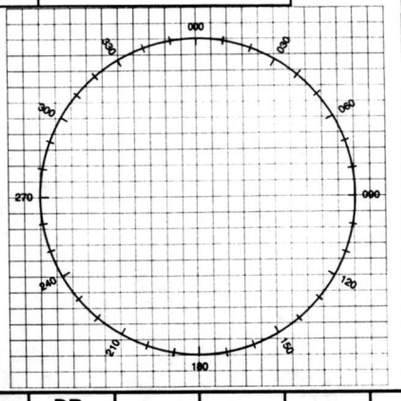
REMARKS

6646W

CLEARANCES			
FREQ	ALT	HDG	OTHER
			20N 61W 2227
			6835
			23512 2105N
2218ØZ		2318ØZ	6717W
22.ØN		24.ØN	
71.3W		75.ØW	

MISSION LOG | **PAGE ___ OF ___**





POSITION REPORT

1. POSITION
2. TIME
3. ALTITUDE
4. NEXT POSITION
5. ETA
6. NEXT POSITION

TRANSMIT TH
FREQUENCY
ANY OF THE

UHF/VOICE
243.0

MAYDAY, M
THIS IS NO

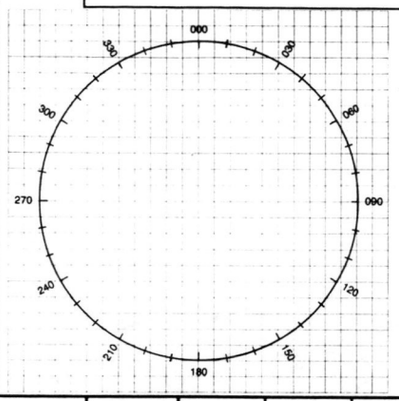
- POSITION
- HEADING
- AT ____
- FLIGHT L
- WE ARE A
- NATURE
- ASSISTAN
- PILOT INT
- WE HAVE

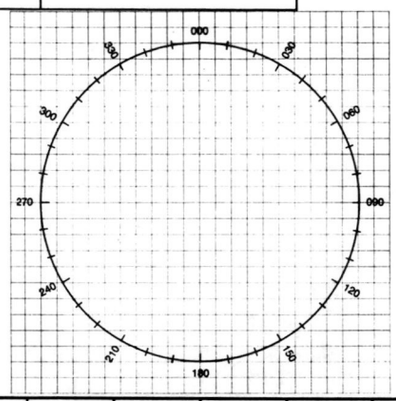
TIME	FIX TYPE	POSITION	INS 1 POSITION	K ERR	INS 2 POSITION	K ERR	MH	VAR +E==>	TH	DR +R==>	TRK	GS	WD	WS	ALT	TAS	NEXT PT	DIST
1733																		
1759																		
1806																		
1843	FM 1	1525.9 5949.8	1526.3 5949.4	-.4 +.4	1526.6 5949.2	-.7 +.6			348	1L	347	29Ø	16Ø	48	FL18Ø	242		
1914		1748.8 6Ø25.9	1748.6 6Ø25.8	+.2 +.1	1749.Ø 6Ø25.9	-.2 Ø			348	3L	345	282	15Ø	47	FL18Ø	238		
1943		2ØØ1.6 61Ø4.1	2ØØØ.2 61Ø4.4	+1.4 -.3	2ØØØ.9 61Ø4.7	+.7 -.6			266	1R	267	288	Ø92	49	FL18Ø	24Ø		
2Ø19		2ØØØ.5 6359.8	1959.8 6359.3	+.7 +.5	2ØØØ.9 6359.3	-.4 +.5			266	4R	27Ø	279	1Ø9	45	FL18Ø	236		
2Ø58	S	21Ø4.7 6647.4	21Ø2.5 6647.8	+1.7 -.4	2103.8 6648.Ø	+.9 -.6			32Ø	5L	315	307	121	8Ø	FL16Ø	233		
2134	S	21Ø6.8 6649.4	21ØØ.Ø 6648.6	+.8 +.8	2102.2 6648.3	-1.4 +1.1												
2217		2333.2 6729.3	2329.6 673Ø.Ø	+3.6 -.7	2332.6 673Ø.4	+.6 -1.1			273	2L	271	32Ø	Ø85	73	FL19Ø	247		
2254		2324.7 71ØØ.9	2322.7 71ØØ.4	+2.Ø +.5	2325.9 7059.7	-1.2 +1.2			175	4R	179	3Ø4	Ø13	61	FL21Ø	247		
2317		2129.7 7Ø64.5	2127.Ø 7Ø64.7	+2.7 -.2	2130.6 7Ø63.5	-.9 +1.Ø			229	Ø	229	328	Ø53	73	FL21Ø	25Ø		
ØØØ8		1856.7 7457.8	1854.2 7459.Ø	+2.5 -1.2	1857.8 7457.7	-1.1 +.1			187	3R	19Ø	248	Ø23	49	FL21Ø	25Ø		
Ø1Ø6		16Ø6.5 7149.6	16ØØ.7 7152.4	+5.8 -2.8	1651.4 7150.4	+1.1 -.8			Ø88	1L	Ø87	296	26Ø	31	FL22Ø	265		
Ø13Ø		1559.8 6945.1	1555.9 6947.8	+3.9 -2.7	16ØØ.4 6945.1	-.6 Ø			Ø93	3L	Ø9Ø	3Ø8	252	47	FL22Ø	265		
Ø241		16Ø1.4 67Ø1.Ø	1557.Ø 67Ø3.2	+4.4 -2.2	16Ø1.1 6659.Ø	+.3 +2.Ø			Ø55	2L	Ø53	3Ø9	22Ø	4Ø	FL23Ø	27Ø		
Ø235		1742.4 6447.3	1735.2 6452.1	+7.Ø -4.8	1739.7 6448.9	+2.7 -1.6												
Ø24Ø																		

2252

OTHER
6W 2227
6835
2105N
6717W

MISSION LOG | **PAGE ___ OF ___**





POSITION REPORT

1. POSITION
2. TIME
3. ALTITUDE
4. NEXT POSITION
5. ETA
6. NEXT POSITION

EMERGENCY MESSAGE

TRANSMIT THE FOLLOWING MESSAGE TO ANY AGENCY ON THE AIR-GROUND FREQUENCY IN USE. IF UNABLE TO ESTABLISH COMMS, ATTEMPT CONTACT ON ANY OF THE FOLLOWING EMERGENCY FREQUENCIES:

UHF/VOICE	VHF/VOICE	MF/VOICE	HF/CW	MF/CW
243.0	121.5	2182 KHZ	8364 KHZ	500 KHZ

MAYDAY, MAYDAY, MAYDAY
THIS IS NOAA _____, NOAA _____, NOAA _____

- POSITION _____ N / S
  _____ E / W AT _____Z
- HEADING _____ TRUE/MAG
- AT _____ KTS TRUE/INDICATED
- FLIGHT LEVEL OR ALTITUDE _____
- WE ARE A P-3 AIRCRAFT WITH _____ SOULS ON BOARD
- NATURE OF EMERGENCY
- ASSISTANCE DESIRED
- PILOT INTENTIONS
- WE HAVE _____ ENDURANCE REMAINING

OSITION	K ERR	INS 2 POSITION	K ERR	MH	VAR +E==>	TH	DR +R==>	TRK	GS	WD	WS	ALT	TAS	NEXT PT	DIST	TIME	ETA	REMARKS
																		ENG START BLOCK OUT TAKE OFF
26.3 19.4	-.4 +.4	1526.6 5949.2	-.7 +.6			348	1L	347	29ϕ	16ϕ	48	FL18ϕ	242					
18.6 5.8	+.2 +.1	1749.ϕ 6ϕ25.9	-.2 ϕ			348	3L	345	282	15ϕ	47	FL18ϕ	238					
ϕ.2 4.4	+1.4 -.3	2ϕϕϕ.9 61ϕ4.7	+.7 -.6			266	1R	267	288	ϕ92	49	FL18ϕ	24ϕ					DROP #1
9.8 9.3	+.7 +.5	2ϕϕϕ.9 6359.3	-.4 +.5			266	4R	27ϕ	279	1ϕϕ	45	FL18ϕ	236					DROP #2
32.5 17.8	+1.7 -.4	2-1ϕ3.8 6648.ϕ	+.9 -.6			32ϕ	5L	315	3ϕ7	121	8ϕ	FL16ϕ	233					5 NM TO SW
3ϕ.ϕ 5.6	+.8 +.8	2102.2 6648.3	-1.4 +1.1															
29.6 3ϕ.ϕ	+2.6 -.7	2332.6 673ϕ.4	+.6 -1.1			273	2L	271	32ϕ	ϕ85	73	FL19ϕ	247					
7.7 ϕ.4	+2.ϕ +.5	2325.9 7ϕ59.7	-1.2 +1.2			175	4R	179	3ϕ4	ϕ13	61	FL21ϕ	247					
7.ϕ 34.7	+2.7 -.2	213ϕ.6 7163.5	-.9 +1.ϕ			229	ϕ	229	328	ϕ53	73	FL21ϕ	25ϕ					
4.2 9.ϕ	+2.5 -1.2	1857.8 7457.7	-1.1 +1.1			187	3R	19ϕ	298	ϕ23	49	FL21ϕ	25ϕ					DROP
ϕ.7 2.4	+5.8 -2.8	16ϕ5.4 715ϕ.4	+1.1 -.8			ϕ88	1L	ϕ87	296	26ϕ	31	FL22ϕ	265					
5.9 17.8	+3.9 -2.7	16ϕϕ.4 6945.1	-.6 ϕ			ϕ93	3L	ϕ9ϕ	3ϕ8	252	47	FL22ϕ	265					DROP
2.ϕ 63.2	+4.4 -2.2	16ϕ1.1 6659.ϕ	+.3 +2.ϕ			ϕ55	2L	ϕ53	3ϕ9	22ϕ	4ϕ	FL23ϕ	27ϕ					DROP
5.2 22.1	+7.ϕ -4.8	1739.7 6448.9	+2.7 -1.6															LAND BLOCK IN
9		3																

NOAA FORM 56-49
(2-95)

MISSION PREFLIGHT LOG

DESTINATION: TRPBBATISX | MISSION: I S BONNIE | NAVIGATOR: NATHBUN | AIRCRAFT COMMANDER: PHILLIPSBORN | FLIGHT DIRECTOR: CZYZYK | SCHEDULED / ACTUAL TAKEOFF Z: 1800Z / 1806 | DATE OF TAKEOFF: [redacted]

	WP	LAT / LON	RTE	MH	VAR +E==>	TH	DR +R==>	TRK	GS	WD	WS	ALT	TAS	LEG / TOT DIST	LEG / TOT TIME	PROP ETA	ETA	ATA	REM
1	TRPB	13 04.6 59 29.5												------	------				
2	/	20 00 61 00												------	------				
3	/	20 00 64 00												------	------				
4	/	20 00 66 30												------	------				
5	5	~~20 30~~ 68 00	211 5540	21 01 66 49										------	------				
6	~~WP~~	2136 6727												------	------				
7	SAN	2025 6727												------	------				
8	IVR	2136 6611												------	------			2211	
9		2330 6700							285					110 110	+23 +23	2234			
1	NRPP	2330 6900							285					110 220	+23 +46	2257		2252	
2		2330 7100							[illegible]					120 340	+26 1+12	2323	2318	2315	
3		2130 7100												135 475	+29 1+41	2352		2342	
4	NRPP	2015 7300												135 610	+29 241 0	0021		0006	
5		19 00 75 00												90 700	+18 +18	0024		0024	
6		1730 7500												174 870	+34 152	0058		0055	
7		1600 7230												160 1030	+32 1+24	0130		0130	
8	NRPP	1600 6015												160 1190	+32 1+56	0202		0201	
9		1606 6700							270					170 1360	+38 2+34	0240			
1	CBY	1744.1 6442.1												------	------				
2	TBSX	1742.1 6447.9												------	------				
		----------												------	------				
		----------												------	------				

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
AIRCRAFT OPERATIONS CENTER

FLIGHT LOG

SION	NAVIGATOR	AIRCRAFT COMMANDER	FLIGHT DIRECTOR	SCHEDULED / ACTUAL TAKEOFF Z	DATE OF TAKEOFF
PHOENIX	NATHBUN	PHILIPPSBORN	CZYZYK	1800Z / 1806	21AUG98

IH	- VAR +E==>	TH	DR +R==>	TRK	GS	WD	WS	ALT	TAS	LEG / TOT DIST	LEG / TOT TIME	PROP ETA	ETA	ATA	REMARKS
										------	------				
										------	------				
										------	------				
										------	------				
21 01 66 419										------	------				
										------	------				
										------	------				
										------	------				
										------	------			2211	
					285					110 / 110	+23 / +23	2234			
					285					110 / 220	+23 / +46	2257		2252	
					284					126 / 346	+26 / 1412	2323	2318	2315	
										135 / 475	+29 / 1441	2352		2342	
										135 / 610	+29 / 2110	0021		0006	
										90 / 700	+18 / 2128	0024		0024	
										174 / 874	+34 / 2202	0058		0055	
										166 / 1040	+32 / 2234	0130		0130	
										166 / 1206	+32 / 2306	0202		0201	
					270					178 / 1384	+38 / 2344	0240			
										------	------				
										------	------				
										------	------				
										------	------				

INS PERFORMANCE

	INS 1	INS 2
BEGIN ALIGN TIME	1630Z →	
ALIGN STATUS (0-5)	1	1
END NAV TIME	0235Z	0235Z
START NAV TIME	1755Z →	
DELTA T	8140	8140

TERMINAL ERRORS

	INS 1	INS 2
DELTA LAT	+7.0	+2.7
DELTA LON	-4.8	-1.6
RGS	5	4
RADIAL ERROR	9	3

REMARKS